FORCEnet

16th Annual National
Operations Security Conference
24 May 2005

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Commander
Space & Naval Warfare Systems Command

Agenda

- **A little *SPAWAR* background**

- **Defining FORCEnet**

- **Delivering FORCEnet**
  - **Architecture**
  - **Governance**

- **The Road Ahead**

"Transforming information into decisive effects."

Space & Naval Warfare Systems Command

Who we are …

One of the Navy's three major acquisition commands with 7,600 employees

What we do…

- Partner with PEO- C4I & Space to deliver C4ISR and FORCEnet capability to the joint warfighter

- Partner with PEO-IT, DNMCI & PEO Space Systems

- Develop Navy, Joint and Coalition Interoperability

- Navy C4ISR Chief Engineer

- Navy FORCEnet Chief Architect/Assessor

- Combined TOA $5.8 Billion

Mission, Vision & Commitment

- **<u>Mission Statement</u>:**

   SPAWAR Enterprise "delivers" FORCEnet – transforming information into decisive effects

- **<u>Vision Statement</u>:**

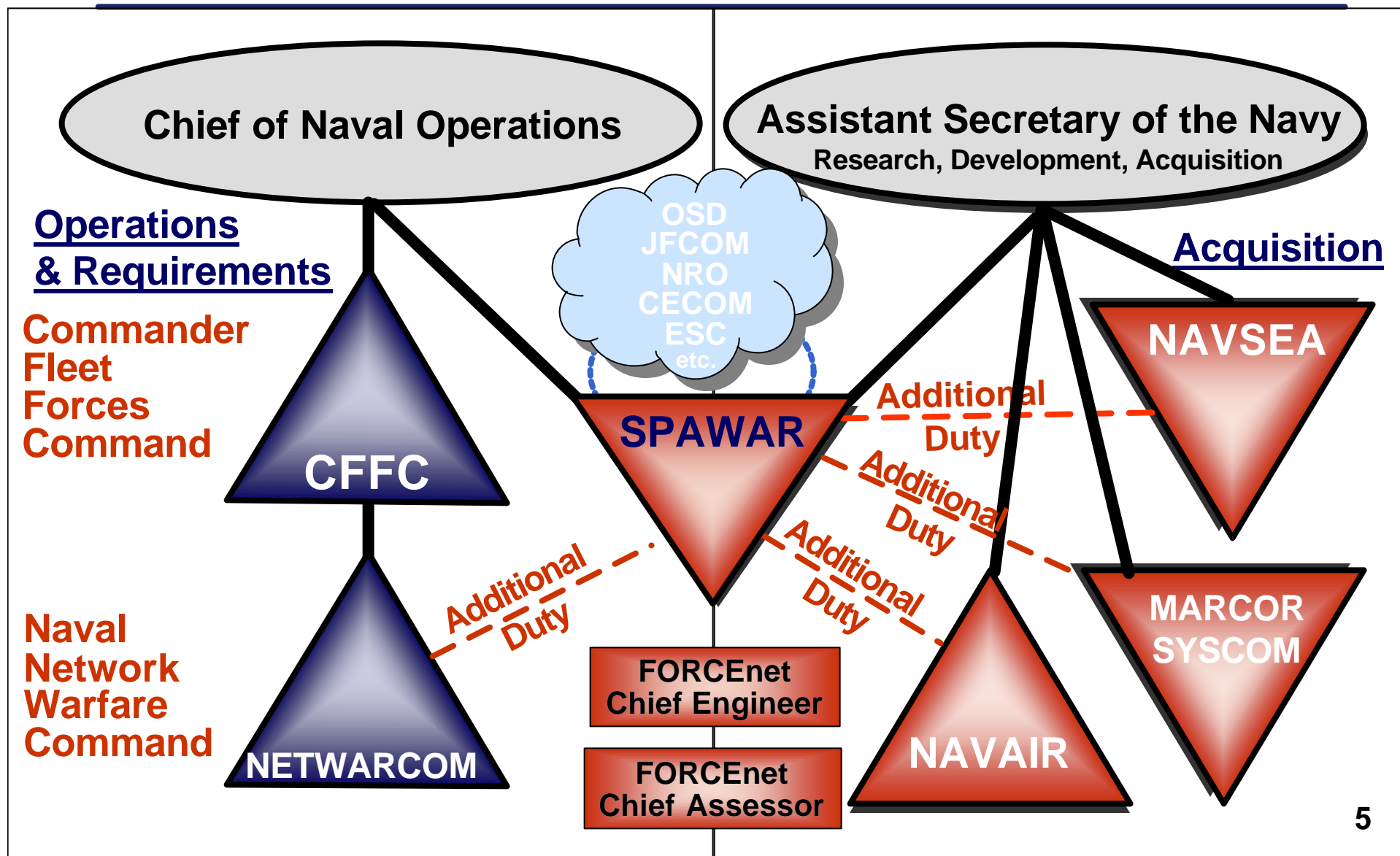   "FORCEnet is the decisive weapon for the future Force"

- **<u>Commitment</u>:**

   – "We are dedicated to the Joint warfighters, who stand in harms way preserving our peace and defending our nation and its allies against aggression at home and abroad."

"Transforming information into decisive effects."

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The FORCEnet "Network"

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The Navy's Vision

SEA POWER 21

Projecting Defensive Assurance
assure allies, deter adversaries, sustain access
Sea Shield

"FORCEnet Is the Operational Construct and Architectural Framework for Naval Warfare in the Information Age Which Integrates Warriors, Sensors, Networks, Command and Control, Platforms and Weapons Into a Networked, Distributed Combat Force, Scalable Across the Spectrum of Conflict From Seabed to Space and Sea to Land."

CNO's Strategic Study Group XXI definition from 22 July 02 CNO Briefing

Sea Strike
Projecting Offensive Power...
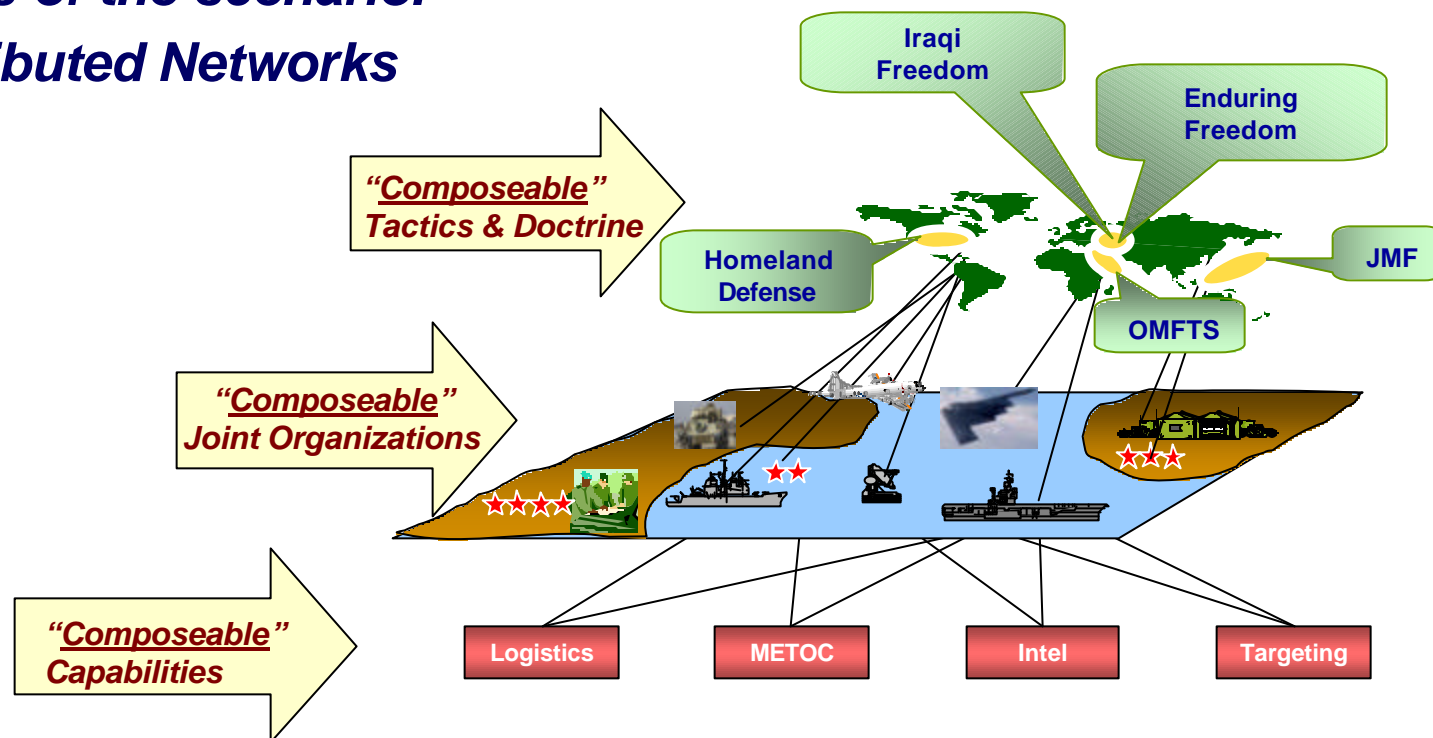responsive, precise, and persistent

Sea Basing
Projecting Operational Independence...
joint power from the sea

FORCEnet Elements

- *"Composeability" -- The ability to select "on the fly" from a vast network, the specific information resources which are best suited to solving a particular problem or providing specific information.*

- *"On the fly" -- Sources will change with the information needs of the scenario.*

- *Distributed Networks*

"Composeable" Tactics & Doctrine

Iraqi Freedom

Enduring Freedom

Homeland Defense

JMF

OMFTS

"Composeable" Joint Organizations

"Composeable" Capabilities

Logistics | METOC | Intel | Targeting

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Current C4I Environment

IT21 Today

- **Bandwidth Constrained**
- **Stovepiped Systems**
- **Inefficient Use of Resources**
- **Little Redundancy**
- **Multiple Enclave and Application Specific Networks**
- **Isolated Coalition Enclaves**
- **Stovepipe Raw Data Streams to Operator**
- **Inconsistent Data Quality Across Information, Sensor and Engagement Networks**

Stovepiped Communications

CDL   TDL   IP

Dedicated Computing & Networks

Security
ISR

Security
Combat Systems

Security
C4 Systems

SCI

JDN

JPN - SIPRNET

UNCLAS

Single Level Clients

The Future Vision: NCW

NCW Objectives

- **Remove Bandwidth as a Capability Limit**
- **Multi-path Transport & Redundant Paths**
- **Capability on Demand**
- **Distributed Operations**
- **Customized Applications**
- **Multi-User Access**
- **Customized Delivery**
- **Assured Sharing**
- **Information Provided to Operator is Relevant, Timely, Accurate, and Usable**

Integrated Roadmap
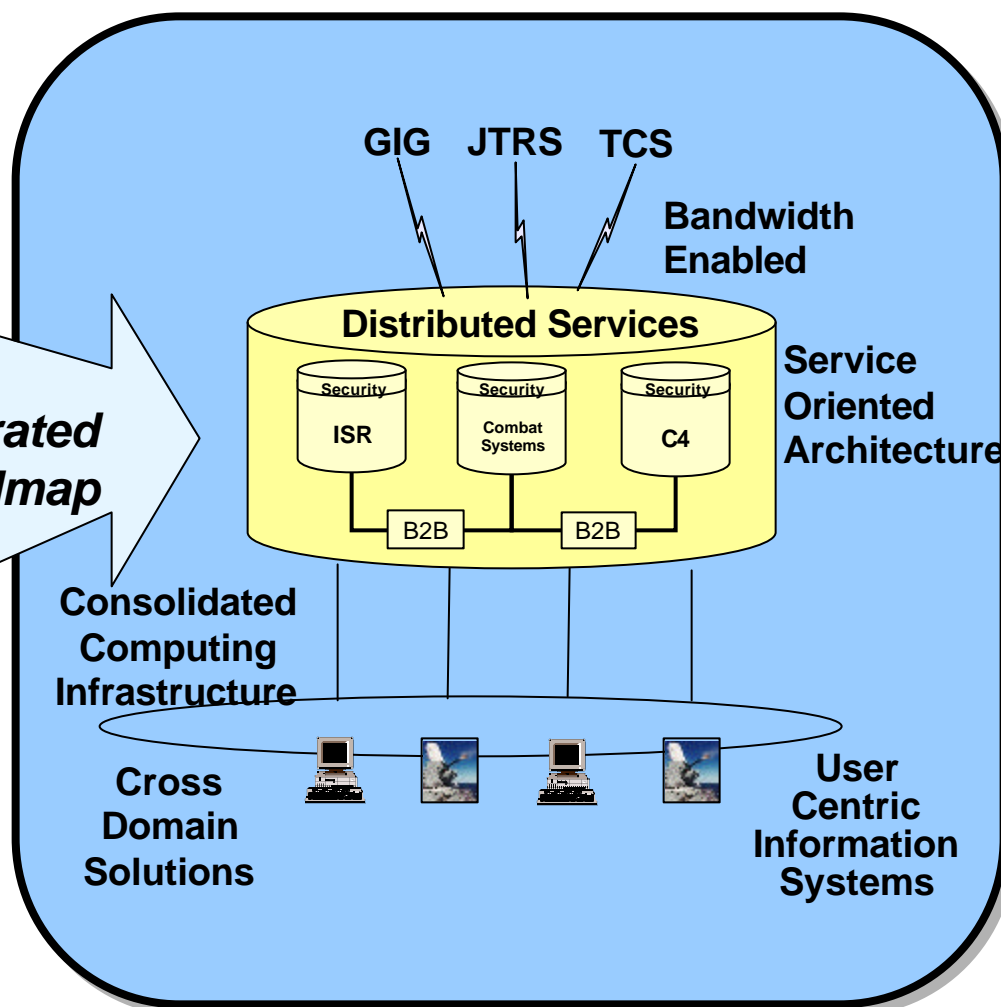
GIG   JTRS   TCS

Bandwidth Enabled

Distributed Services

Security — ISR

Security — Combat Systems

Security — C4

B2B   B2B

Service Oriented Architecture

Consolidated Computing Infrastructure

Cross Domain Solutions

User Centric Information Systems

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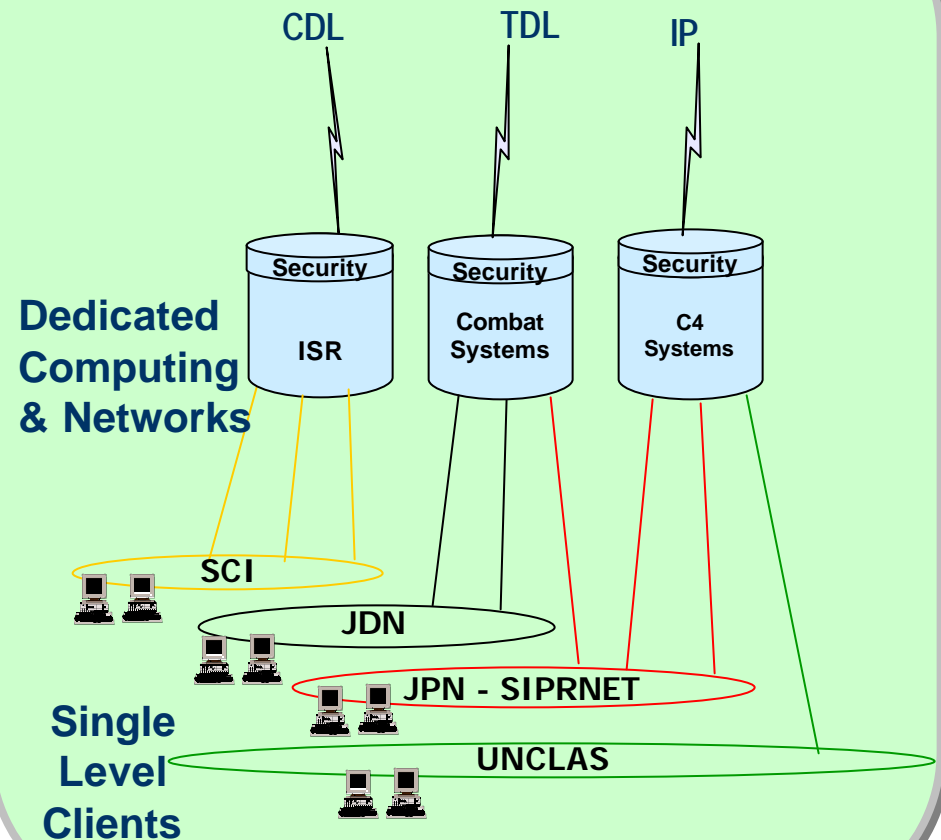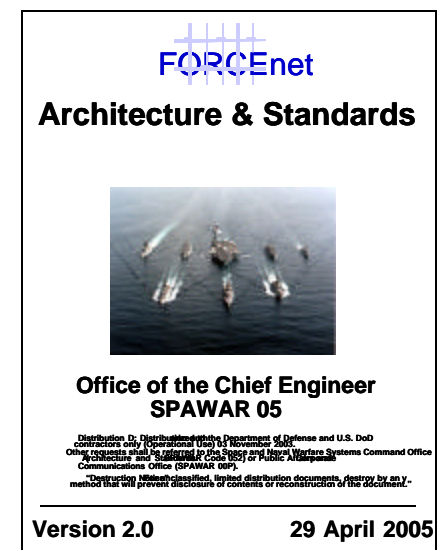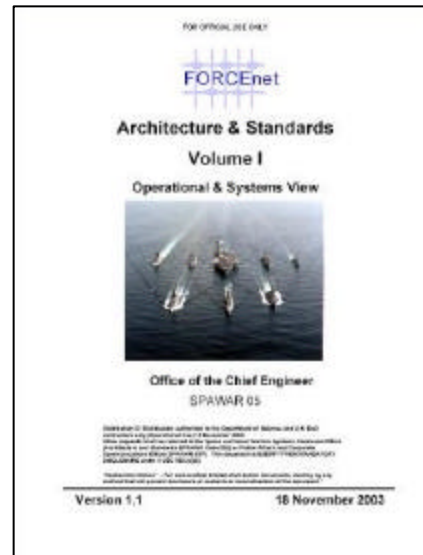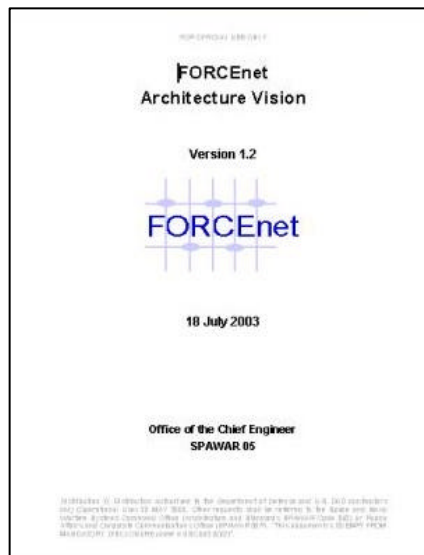
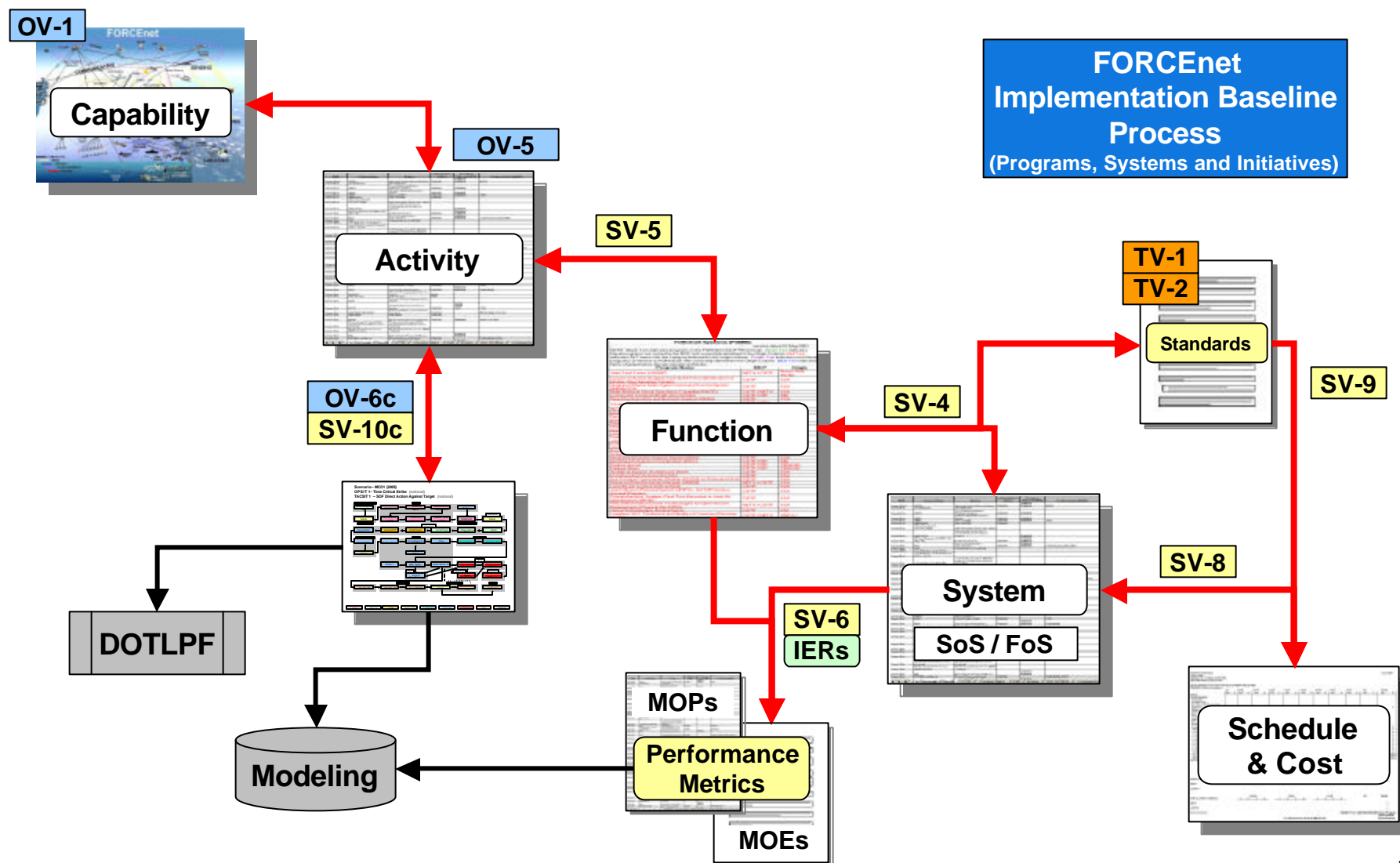*"Transforming information into decisive effects."*

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FORCEnet Architecture

- **The FORCEnet Architecture is being developed to identify an effective and efficient migration strategy that moves Naval PORs from current platform-centric/stovepipe domain to a future Joint and Allied/Coalition Network-Centric domain**

FOR OFFICIAL USE ONLY

FORCEnet
Architecture Vision

Version 1.2

FORCEnet

18 July 2003

Office of the Chief Engineer
SPAWAR 05

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FORCEnet

Architecture & Standards

Volume I

Operational & Systems View

Office of the Chief Engineer
SPAWAR 05

Version 1.1   18 November 2003

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Architecture & Standards

Volume II

Technical View

Office of the Chief Engineer
SPAWAR 05

Version 1.1   18 November 2003

FORCEnet

Architecture & Standards

**Office of the Chief Engineer
SPAWAR 05**

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Architecture and Standards Code 057 or Public Affairs
Communications Office (SPAWAR 00P).
"Destruction Notice—Unclassified, limited distribution documents, destroy by any
method that will prevent disclosure of contents or reconstruction of the document."

Version 2.0   29 April 2005

Allied and Coalition Architectures and Standards are an important component of FORCEnet and have been written into the documentation from the outset

SPAWAR

FORCEnet Architectural Flow

OV-1

Capability

OV-5

Activity

FORCEnet Implementation Baseline Process
(Programs, Systems and Initiatives)

SV-5

TV-1
TV-2

Standards

SV-4

SV-9

OV-6c
SV-10c

Function

SV-8

System

SoS / FoS

DOTLPF

SV-6
IERs

MOPs

Performance Metrics

Modeling

MOEs

Schedule & Cost

ISR/TCS "Best of Breed" Choice
Tech Compliance Evaluation Only

DCGS-N Net-Centric Alignment

NOTE

Cost, System Performance

(Mission Plus Reliability Plus

Other Factors) Not Considered

In This Selection. "Single Mission

Thread" Considerations Not Used

At This Point in the Analysis. Data

Is Mission Thread Independent.
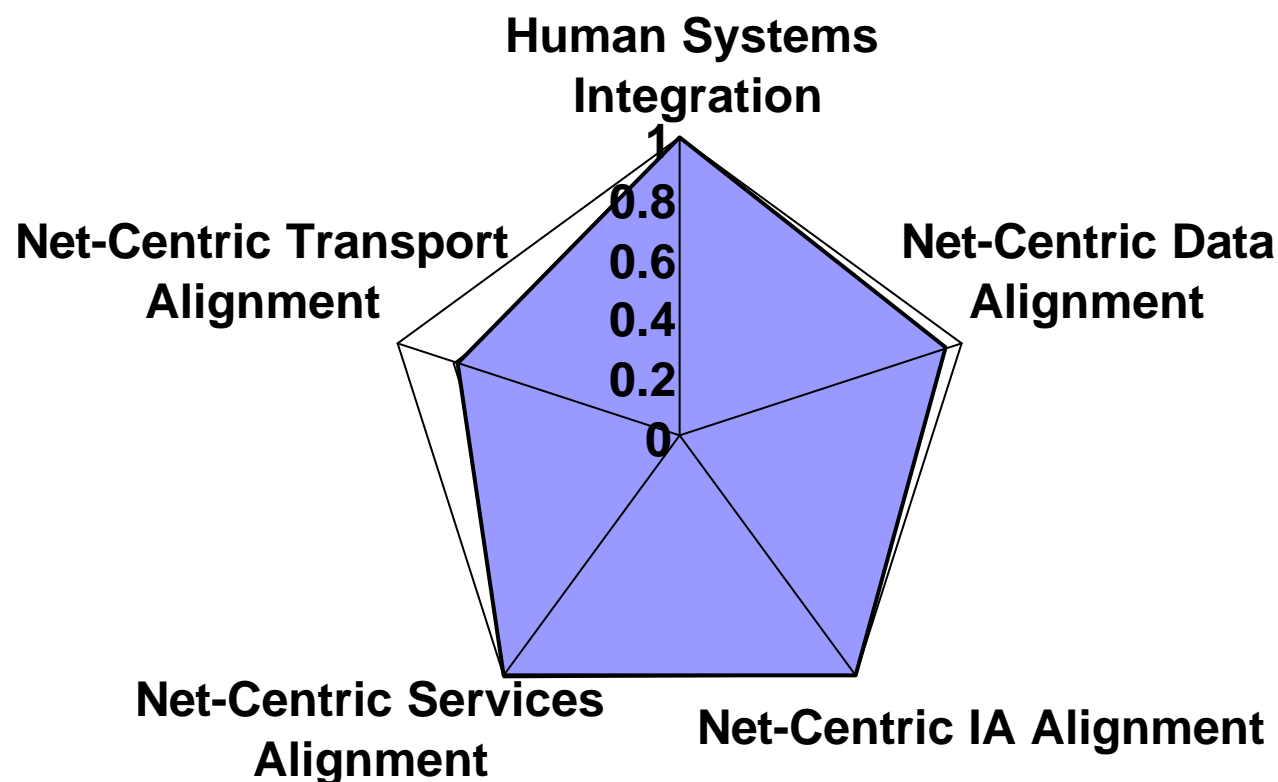
Net-Centric Alignment	Human Systems Integration	Net-Centric Data Alignment	Net-Centric IA Alignment	Net-Centric Services Alignment	Net-Centric Transport Alignment
0.9325	1	0.94	1	1	0.79

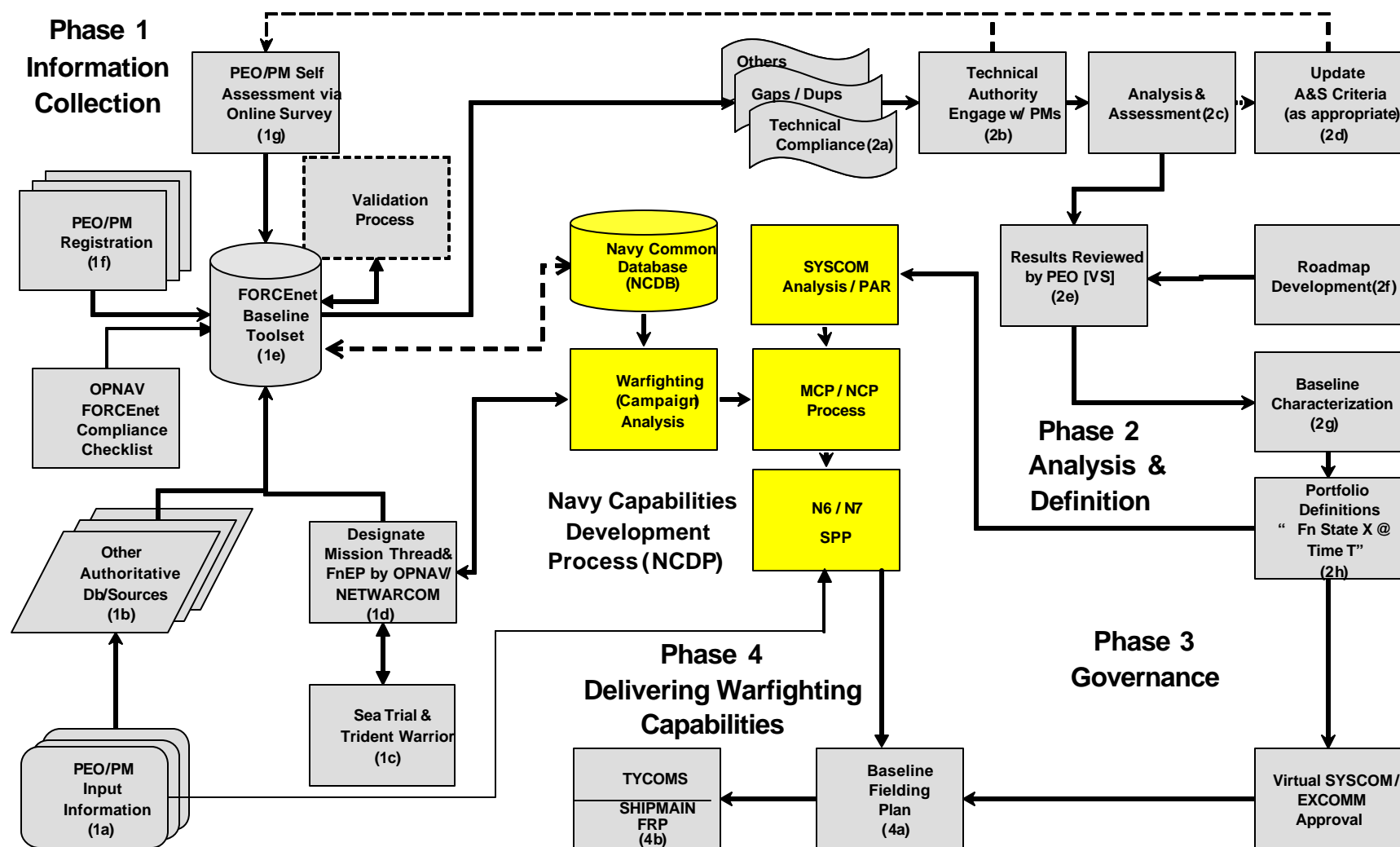*Data as of September 15

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FORCEnet - Implementation Process

SPAWAR

Proposed version 2.0

Phase 1 Information Collection

- PEO/PM Self Assessment via Online Survey (1g)
- PEO/PM Registration (1f)
- Validation Process
- OPNAV FORCEnet Compliance Checklist
- FORCEnet Baseline Toolset (1e)
- Other Authoritative Db/Sources (1b)
- Designate Mission Thread & FnEP by OPNAV/ NETWARCOM (1d)
- Sea Trial & Trident Warrior (1c)
- PEO/PM Input Information (1a)

Others
- Gaps / Dups
- Technical Compliance (2a)
- Technical Authority Engage w/ PMs (2b)
- Analysis & Assessment (2c)
- Update A&S Criteria (as appropriate) (2d)

Navy Capabilities Development Process (NCDP)

- Navy Common Database (NCDB)
- Warfighting (Campaign) Analysis
- SYSCOM Analysis / PAR
- MCP / NCP Process
- N6 / N7 SPP

- Results Reviewed by PEO [VS] (2e)
- Roadmap Development (2f)

Phase 2 Analysis & Definition

- Baseline Characterization (2g)
- Portfolio Definitions "Fn State X @ Time T" (2h)

Phase 3 Governance

- Virtual SYSCOM/ EXCOMM Approval

Phase 4 Delivering Warfighting Capabilities

- TYCOMS SHIPMAIN FRP (4b)
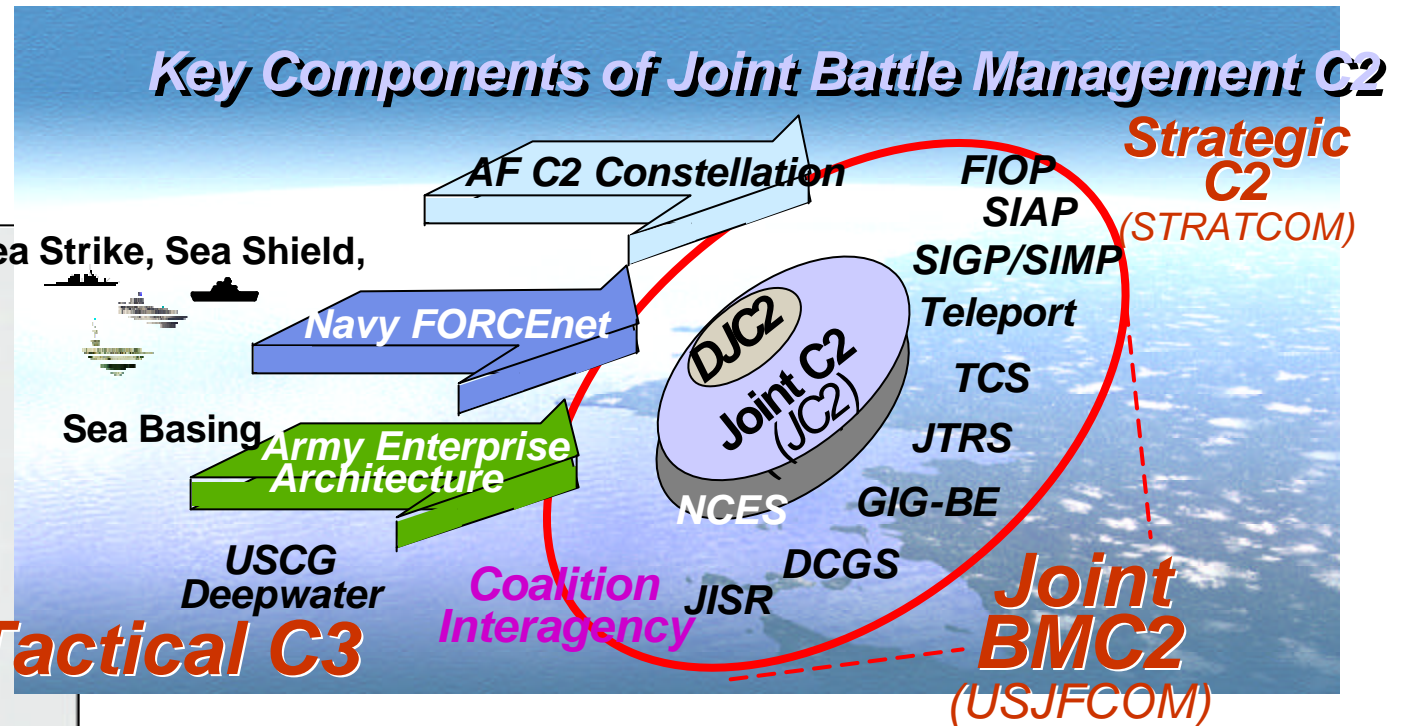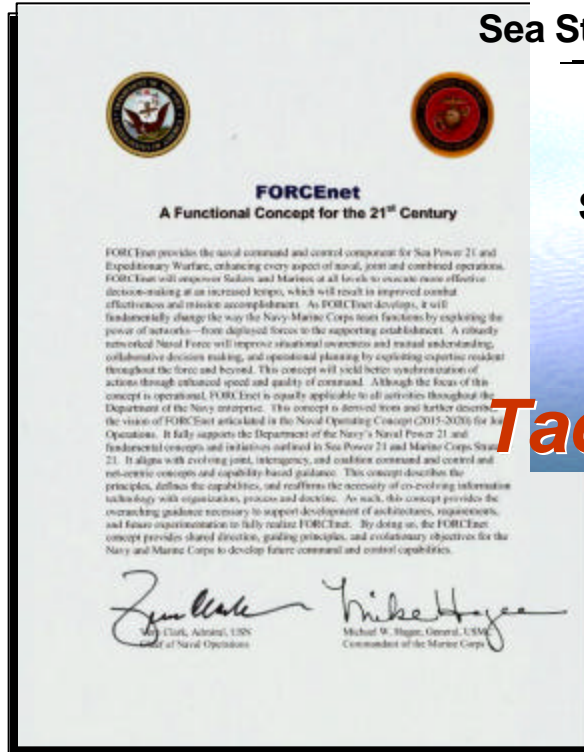- Baseline Fielding Plan (4a)

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  - **Industry Consortium**
  - **Challenges**

Uncertainties

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Naval Component of the Global Information Grid (GIG)

SPAWAR

Key Components of Joint Battle Management C2

AF C2 Constellation

Sea Strike, Sea Shield,

Navy FORCEnet

Sea Basing

Army Enterprise Architecture

USCG Deepwater

Coalition Interagency

JISR

DJC2

Joint C2 (JC2)

NCES

DCGS

FIOP
SIAP
SIGP/SIMP
Teleport
TCS
JTRS
GIG-BE

Strategic C2 (STRATCOM)

Joint BMC2 (USJFCOM)

Tactical C3

FORCEnet
A Functional Concept for the 21st Century

FORCEnet Is an Inherently Joint/Coalition Concept, Relying on and Providing Essential Capabilities to the Joint/Coalition Community and Other Services and Agencies

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Network Centric Operations Industry Consortium (NCOIC)

- **60+ largest, global, defense/commercial companies formed to facilitate systems interoperability**
  - **DOD Service**
  - **Joint, Coalition**
  - **Non-DOD**
  - **Academic**
  - **Corporate**
- **Coordinate Industry efforts to establish standards, enhance integration & eliminate stovepipes**
- **One Focus Area: Test and Experimentation**
  - **Corporate, Navy-Marine Corps, Joint, and Coalition Labs connected in a virtual Network Centric Operations environment**
- **Eight other focus areas**

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NCOIC - Focus Areas

- **Requirements Generation**
- **Process Mapping & Modeling Commonality**
- **Architecture & Standards Integration**
- **Implementation Process & Assessment Alignment**
- **Test & Experimentation**
- **Joint Certification & Systems Implementation**
- **Human Systems Integration/DOTMLPF**
- **Information Assurance Development**
- **NetCentric Acquisition & Contracting Procedures**

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Challenges

- **Constant IT turnover vs process**
- **Time to Market - "Results needed now"**
- **DoD & Navy "Churn"**
- **Efficiency and effectiveness initiatives**
- **Many "Stakeholders"**
- **No new funding**
- **Virtual SYSCOM**

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Summary

- **Fn Foundation Laid in FY03**
  - Architecture
  - Standards
  - Assessments
  - Process & Tools
- **Focus Shifting to Implementation**
  - Virtual SYSCOM a Key Enabler
- **Navy Leading the Joint Effort**

Fn Delivery Begins this FY!